

1 This listing of claims will replace all prior versions, and listings, of claims
2 in the application.

3
4 **Listing of Claims:**

5
6 Claim 1 (Previously presented): A method of synchronizing asynchronous
7 time-based and motion data in a system in which the time-based data and the
8 motion data are transmitted by a server over a network to a client, the method
9 comprising:

10 retrieving a time-based data stream and a motion data stream at the server,
11 each stream comprising frames of data;

12 variably buffering one of the time-based data stream and the motion data
13 stream at the server to produce two streams having synchronized frames; and

14 using the synchronized frames at the client for playback of synchronized
15 motion and time-based data to a user.

16
17 Claim 2 (Cancelled)

18
19 Claim 3 (Previously presented): The method of claim 1 further including
20 calculating a difference between delays for the motion data stream and the time-
21 based data stream through the server to determine an amount of variable buffering
22 for a faster of the two streams.

1 Claim 4 (Original): The method of claim 1 further including transferring
2 only those data values for a frame that have changed since a last frame was
3 transmitted.

4
5 Claim 5 (Original): The method of claim 1 wherein the network is the
6 Internet.

7
8 Claim 6 (Original): The method of claim 1 wherein the motion data is
9 mapped to control the movement of a virtual figure displayed in a scene at the
10 client.

11
12 Claim 7 (Original): The method of claim 1 wherein the motion data is
13 generated by a body suit.

14
15 Claim 8 (Original): The method of claim 1 wherein the motion data
16 includes background data for use in producing a scene at the server.

17
18 Claim 9 (Original): The method of claim 1 wherein data transfer from the
19 server to the client is concurrent with the receipt of the time-based data stream and
20 motion data stream at the server.

21
22 Claim 10 (Original): The method of claim 1 wherein the time-based data is
23 voice data.

1 Claim 11 (Original): The method of claim 1 wherein the synchronized data
2 frames include one or more data channels, the server transmitting on the network
3 at a predetermined interval between synchronized data frames a descriptor packet
4 which describes each channel contained in the synchronized data frames such that
5 a client may join in progress a multicast of synchronized data frames.

6
7 Claim 12 (Original): The method of claim 1 wherein the time-based data is
8 a pre-recorded audio track and the method further includes synchronizing playback
9 of the pre-recorded audio track at the server and buffering of the pre-recorded
10 audio track to allow for coupling with motion data generated in time with the
11 playback of the pre-recorded audio track.

12
13 Claim 13 (Original): The method of claim 1 further including sequencing
14 synchronized frames output from the server to the client to provide for ordered
15 playback of the synchronized frames to a user at the client.

16
17 Claim 14 (Original): A method of packaging synchronized frames of data
18 where each frame includes one or more channels of data in a system in which
19 synchronized frames are transmitted by a server over a network to a client, the
20 method comprising:

21 storing a last data value for each channel in each frame transmitted over the
22 network;

23 retrieving new synchronized frames for transmission over the network; and

24 packaging and transmitting over the network only data for channels having
25 changed data values.

1
2 Claim 15 (Original): The method of claim 14 further including transmitting
3 a descriptor packet at a predetermined interval over the network, the descriptor
4 packet including channel descriptors for each channel in the synchronized frames.
5

6 16. (Previously presented) An apparatus resident on a server for
7 synchronizing asynchronous time-based and motion data in a system in which the
8 time-based data and motion data are transmitted by the server over a network to a
9 client, the apparatus comprising:

10 a data retriever for retrieving a time-based data stream and a motion data
11 stream at the server, each of the streams comprising frames of data;

12 a data stream synchronizer for buffering one of the time-based data stream
13 and the motion stream to produce two streams having synchronized frames; and

14 a packetizer for packaging synchronized frames of motion data and time-
15 based data for use at the client for playback of synchronized motion and time-
16 based data to a user.
17

18 Claim 17 (Original): The apparatus of claim 16 further including a
19 multicaster for multicasting the synchronized motion and time-based data to clients
20 couple to the network.
21

22 Claim 18 (Original): The apparatus of claim 16 wherein the packetizer
23 includes a storage device and a comparator, the storage device for storing data
24 values last transmitted over the network for each channel in each of the
25 synchronized frames, the comparator for comparing data values for new frames

1 with the data values stored in the storage device, the packetizer only packaging for
2 transmission to the client channel data for channels having changed data values as
3 determined by the comparator.
4

5 Claim 19 (Original): A method for playing back time-based and motion
6 based data that has been synchronized comprising:

7 mapping the motion based data to control the movement of a virtual figure
8 in a scene displayed at a client; and

9 playing back in synchronization with movement of the virtual figure the
10 time-based data.
11

12 20. (Previously presented) A method of synchronizing asynchronous
13 motion and audio data at a server computer in a system in which the motion and
14 the audio data are transmitted by the server computer to one or more clients, the
15 clients providing a real time output of synchronized motion and audio data, the
16 method comprising:

17 retrieving an audio stream including voice data and a motion data stream
18 including one or more motion data channels at the server, each stream including
19 frames of data;

20 calculating a delay through the server for a frame of data on each of the
21 streams;

22 calculating a difference between the delay for the audio stream and the
23 motion data stream to determine which of the two streams is faster;
24
25

1 variably buffering a faster of the streams to synchronize the audio stream
2 and the motion data stream resulting in two output streams having synchronized
3 data frames;

4 packaging the synchronized data frames;

5 multicasting the synchronized data frames to one or more clients over a
6 network;

7 at each client computer, using the synchronized data frames for
8 synchronous playback of the audio and motion data for display to a user.